

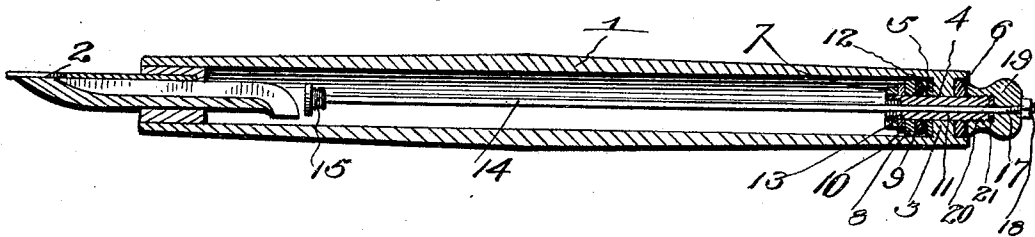
No. 800,039.

PATENTED SEPT. 19, 1905.

F. E. WILLIAMS.
FOUNTAIN PEN.

APPLICATION FILED NOV. 10, 1904.

Fig. 1.



Figs. 2.

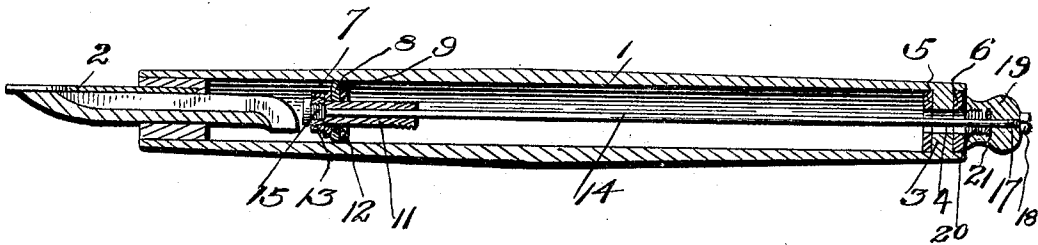
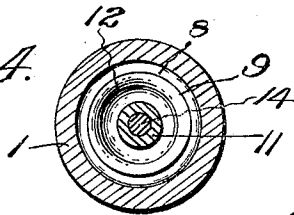
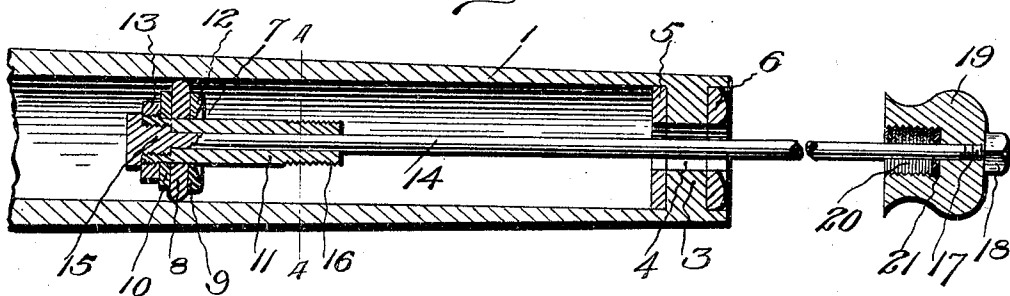


Fig. 3.



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FOUNTAIN-PEN.

No. 800,039.

Specification of Letters Patent.

Patented Sept. 19, 1905.

Application filed November 10, 1904. Serial No. 232,175.

To all whom it may concern:

Be it known that I, FREDERICK EARL WILLIAMS, a citizen of the United States, residing at Janesville, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Fountain-Pens; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in self-filling fountain-pens; and it consists in the construction, combination, and arrangement of devices hereinafter described and claimed.

The object of my invention is to provide a simple, comparatively inexpensive, durable, and efficient fountain-pen-filling device in the form of a piston slidably mounted in the barrel or ink-reservoir.

The above and other objects, which will appear as the nature of my invention is better understood, are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view through a pen constructed in accordance with my invention, the filling device being in its closed or normal position. Fig. 2 is a similar view showing the parts adjusted and ready for filling the pen. Fig. 3 is a detail longitudinal sectional view on an enlarged scale, and Fig. 4 is a transverse sectional view taken on the line 4 4 of Fig. 3.

Referring to the drawings by numeral, 1 denotes the body or barrel of the pen, which is in the usual cylindrical form, provided at one of its ends with a pen-point 2 and the usual feeding connection, which may be of any well-known or preferred construction. At the opposite end of the hollow cylindrical body or barrel 1 is a head 3, which is formed with a centrally-disposed opening 4 and has upon its inner and outer faces disks or rings 5 and 6, of packing material, the ring 5 upon its inner face being preferably of leather and the ring 6 upon its outer face being preferably of cork and in the form shown.

Slidably mounted within the barrel 1 is a piston 7, which consists of a disk 8, preferably formed of leather or chamois-skin and confined between a head or collar 9 and a washer 10, which are disposed upon a tubular stem 11. The head or collar 9 is fixed upon said stem and is formed upon its outer face with an annular rib 12, the purpose of which will presently appear. The leather disk 8 is clamped

between said head 9 and the washer 10 by a nut 13, which is screwed upon the inner end of said tubular stem 11. Extending through and slidable in the opening 4 in the head 3, which closes the outer end of the body or barrel 1, and also through the bore of the tubular stem 11 is a rod 14, which has upon its inner end an enlarged externally-screw-threaded portion 15, which is adapted to enter an internally-screw-threaded portion of the bore of the stem 11 in order to close said bore, as clearly shown in Fig. 3 of the drawings. The outer end of the stem 11 is externally screw-threaded, as at 16, and is adapted to project through the opening 4 in the head 3 when said piston is moved to the outer end of the pen-barrel 1.

Upon the outer end of the rod 14 is fastened, preferably, though not necessarily, by screw-threads 17 and a nut 18, a cap 19, which is tubular in form and has its bore internally screw-threaded, as at 20, in order to screw upon the threaded portion 16 of the stem 11 of the piston. At the inner end of the screw-threaded bore or recess 20 is a packing 21, of cork or other suitable material.

It will be seen that when the parts are in the position shown in Fig. 1 of the drawings the piston 7 is in the outer end of the pen-barrel and is retained therein by the cap 19, which is screwed upon the outer end of the stem 11 to clamp the piston against the inner face of the head 3 to close the opening 4, the rib 12 upon the head 9 being so shaped as to embed itself in the leather washer 5, and thereby provide an air and liquid tight closure. The packing-ring 6 and the packing 21 will also prevent any leakage at the outer end of the pen-barrel. When it is desired to fill the pen, the cap 19 is unscrewed from the stem 16 and drawn outwardly and then turned so that its screw-threaded end or plug 15 engages the internally screw-threaded portion of the bore of the stem 11 to thereby connect the piston 7 to the rod 14. The piston is then moved to the inner end of the barrel, and the pen-point 2 is dipped in ink, so that when the piston 7 is moved to the outer end of the pen-barrel by means of the cap 19 and the rod 14 ink will be drawn or sucked into the pen-barrel behind the piston 7, as will be readily understood. The cap 19 is then turned to disconnect the inner end of the rod 14 from the stem 11. The rod 14 is then pushed into the pen-barrel, leaving the piston and its stem in the outer end of the latter, so that the cap

19 can be screwed upon said stem, as shown in Fig. 1 of the drawings.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring further explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a self-filling fountain-pen, the combination of a pen-barrel having a vent at the end opposite that which carries the pen, a piston having a portion to protrude through the said vent when the piston is at the outer end of the barrel, a piston-rod on which the piston is slidable, said rod and piston having co-acting connecting and disconnecting means, and a closure at the outer end of the piston-rod, opening the vent while the piston is being drawn outwardly in the pen-barrel and closing the vent when the piston is at the inner limit of its movement, said closure and the protruding portion of the piston having co-acting attaching and detaching means to secure said piston to said closure when the piston is disengaged from the piston-rod, is at the outer limit of its movement, and the said closure is in position to close the vent.

2. In a self-filling fountain-pen, the combination of a pen-barrel having an opening in one of its ends, a piston in said pen-barrel, a rod extending through said opening, means for slidably connecting the inner end of said rod to said piston, and means for detachably connecting the outer end of said rod to said piston to close said opening.

3. In a self-filling fountain-pen, the combination of a pen-barrel having an opening in one of its ends, a piston in said pen-barrel, a hollow stem upon said piston adapted to project through said opening, a rod projecting through said opening and said stem, means

for detachably connecting said rod to said piston, and means detachably engaged with the outer projecting end of said stem to clamp said piston in the end of said pen-barrel to close said opening, substantially as described.

4. In a self-filling fountain-pen, the combination of a pen-barrel having an opening in one of its ends, a piston in said pen-barrel, a hollow stem extending through said piston and formed with inner and outer screw-threaded portions, the outer screw-threaded portion being adapted to project through said opening, a rod projecting through said opening and said hollow stem and having a screw-threaded portion upon its inner end to engage the inner threaded portion of said stem, and a cap on the outer end of said rod having a screw-threaded socket adapted to engage the outer threaded portion of said stem when the latter projects through said opening, substantially as described.

5. In a self-filling fountain-pen, the combination of a pen-barrel having an apertured head in one end, packing material upon each side of said head, a piston in said barrel, a tubular stem extending through said piston and having its inner end internally screw-threaded and its outer end externally screw-threaded and adapted to project through the aperture in said head, a rod projecting through said aperture and the bore of said stem and formed at its inner end with an externally-screw-threaded portion adapted to be screwed into the internally-screw-threaded portion of said stem, and an internally-screw-threaded cap upon the outer end of said rod adapted to engage the externally-screw-threaded portion of said stem when the latter projects through said aperture, in order to clamp said piston against said head and thereby close said aperture, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDERICK EARL WILLIAMS.

Witnesses:

ANDREW C. POND,
JOHN G. REXFORD.